

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 6 and 11 have been cancelled without prejudice or disclaimer.

1. (Currently Amended) A spatial light modulator imaging system, comprising:
at least one electrically addressed spatial light modulator (EASLM); ~~(4, 30)~~
an optically addressed spatial light modulator (OASLM) ~~(6, 8, 31)~~ itself comprising
including a layer (24) of a nematic liquid crystal material contained between two cell walls (15, 24) provided with in parallel in opposite direction alignment, the layer thickness d and the
birefringence Δn at a wavelength λ approximately satisfy the equation $\Delta n \cdot d = \lambda/4$;
an optical system ~~(5, 32)~~ for directing light from the EASLM ~~(4, 30)~~ onto the OASLM;
~~(6, 8, 31)~~
a controller ~~(13, 40)~~ for loading images on the EASLM ~~(4, 30)~~ then optically onto the
OASLM; ~~(6, 8, 31)~~
a controller ~~(13)~~ for applying write voltages to the OASLM ~~(6, 8, 31)~~ simultaneously
with application of addressing light ~~(9, 33)~~; and
a read light source ~~(10, 12, 36)~~ providing coherent light of one or more wavelengths for
illuminating the OASLM ~~(8, 31)~~ to provide visible diffracted images;
wherein the OASLM has at least one electrode that is segmented into a plurality of
separately electrically addressable regions, and wherein the controller is adapted to apply
voltages to the electrode so as to address different regions at different times.

the arrangement being such that a plurality of images are read into the EASLM (4, 30) and thence onto the OASLM (6, 8, 31) at a rate sufficient to present a stable holographic image to an observer (11).

2. (Currently Amended) A spatial light modulator imaging system comprising:

at least one electrically addressed spatial light modulator EASLM_i (4, 30)

a monostable optically addressed spatial light modulator OASLM (6, 8, 31)

arranged to receive addressing light (1, 2, 33) from the EASLM (4, 30) through an optical system; (5, 32)

a controller (13, 40) for loading images onto the EASLM (4, 30) then optically onto the OASLM_i (6, 8, 31)

a controller (13) for applying write voltages to the OASLM (6, 8, 31) simultaneously with application of addressing light; and (9, 33);

a read light (10, 12, 36) for illuminating the OASLM (8, 31) to provide visible images;

wherein the OASLM has at least one electrode that is segmented into a plurality of separately electrically addressable regions, and wherein the controller is adapted to apply write voltages to the electrode so as to address different regions at different times,

the arrangement being such that a plurality of images are read into the EASLM (4, 30) and thence onto the OASLM (6, 8, 31) at a rate sufficient to present a stable image to an observer (11).

3. (Original) The system of claim 2 wherein the read light is incoherent light.

4. (Original) The system of claim 2 wherein the read light is incoherent light.

5. (Original) The system of claim 2 wherein the OASLM comprises a layer of a nematic liquid crystal material.

6. (CANCELLED)

7. (Original) The system of claim 2 wherein the OASLM comprises a layer of nematic liquid crystal material contained between two cell walls provided with parallel in opposite direction alignment.

8. (Original) The system of claim 2 wherein the OASLM comprises a layer of a nematic liquid crystal material contained between two cell walls provided with parallel in opposite direction alignment with a surface tilt of less than 10° .

9. (Original) The system of claim 2 wherein the OASLM comprises a layer of a nematic liquid crystal material contained between two cell walls provided with parallel in opposite direction alignment, the layer thickness d and the birefringence Δn at a wavelength λ approximately satisfy the equation $\Delta n \cdot d = \lambda/4$.

10. (Original) The system of claim 2 wherein the EASLM is a single EASLM whose output is arranged to be scanned sequentially over different areas of the OASLM.

11. (CANCELLED)

12. (Original) The system of claim 2 wherein the OASLM is formed by a plurality of single OASLMs arranged to be addressed in a sequence by light from the EASLM.

13. (Currently Amended) The system of claim 2 wherein the controller contains computer generated holographic images for providing a diffraction pattern to be loaded into the EASLM (4) and displayed to an observer as a three dimensional image.

14. (Currently Amended) The system of claim 2 wherein the EASLM (30) is an m by n array of separately addressable EASLMs and the OASLM (31) is an m -by- n array of segments or separate OASLMs.

15. (Currently Amended) The system of claim 2 wherein the OASLM contains a layer of
nematic liquid crystal material arranged in a twisted configuration (90°, 180°, 270°, 360° of
twist).